



COUNCIL MINUTES

September 29, 2016

The City Council of the City of Mesa met in a Study Session in the lower level meeting room of the Council Chambers, 57 East 1st Street, on September 29, 2016 at 7:31 a.m.

COUNCIL PRESENT

John Giles
Christopher Glover
Dennis Kavanaugh
David Luna
Dave Richins

COUNCIL ABSENT

Alex Finter
Kevin Thompson

OFFICERS PRESENT

Christopher Brady
MaryGrace McNear
Dee Ann Mickelsen

Mayor Giles excused Councilmembers Finter and Thompson from the entire meeting.

1. Review items on the agenda for the October 3, 2016 Regular Council meeting.

All of the items on the agenda were reviewed among Council and staff and the following was noted:

Conflict of interest: None.

Items removed from the consent agenda: None.

2. Hear a presentation and discuss the conversion of existing high pressure sodium (HPS) streetlight fixtures to more energy efficient light emitting diode (LED) streetlight fixtures and provide direction on possible financing options to transition the City's entire streetlight network from HPS to LED fixtures.

Transportation Department Director Lenny Hulme announced that Deputy Transportation Director Gordon Haws would be presenting the details of the streetlight fixture conversion.

Mr. Haws displayed a Powerpoint presentation related to converting the existing streetlights to more energy efficient fixtures. **(See Attachment 1)** He introduced Streetlight Systems Supervisor Richard Woodward and Adam Bowers, Project Engineer with Wright Engineering, who were present to answer any questions from the Council.

Mr. Haws stated that staff requests replacing existing high pressure sodium (HPS) light fixtures with more energy efficient light emitting diode (LED) light fixtures to reap the benefits of lower energy usage and costs.

Mr. Haws provided a comparison of HPS and LED lamps. (See Page 3 of Attachment 1) He reported that LED lamps have been commercially available for street lights since 2008 and the cost continues to decrease. He noted that LED lamps offer longer lamp life, lower maintenance and energy costs and are so attractive that many HPS manufacturers are moving toward LED.

Mr. Haws reported that Mesa currently spends approximately \$3.1 million per year on energy costs for street lights. He indicated that LED fixtures use less energy and often last 20 years or more, which results in reduced maintenance costs.

In response to a question from Councilmember Richins, Mr. Hulme explained that since street lights are only on at dark, the testing cycle was accelerated by running the LED lamps continuously to estimate how long they would last. He noted that although LED street lights have only been around since 2008, diodes have been used and tested for many years.

In response to a question from Councilmember Richins related to the proactive maintenance plan for the light fixtures, Mr. Haws explained that HPS lamps are replaced upon reports from citizens of burnouts. He stated that LED lamps will not have a burnout and would require a 20-year replacement schedule. He added that Mesa currently has software that can forecast and track streetlight replacements.

Mr. Haws announced that other Valley cities (Phoenix, Chandler, Surprise, Glendale and Gilbert) require LED for all new installations. He informed the Council that Phoenix, Austin and Las Vegas are engaged in performing mass LED conversion projects.

Mr. Haws stated that Mesa currently has 36,000 HPS fixtures and the cost to replace each fixture with LED's would be \$240-\$765, for a City total of approximately \$14.6 million. He noted that the return on investment period would be 11.5 years. (See Pages 6 and 7 of Attachment 1)

Mr. Haws explained that the current practice relative to LED conversion is that when an HPS fixture goes bad, or a pole is struck in a traffic accident, it is replaced with a new LED fixture. He indicated that staff also encourages new developments and installations to use LED lighting uniformly.

Mr. Haws reviewed the alternative time frames for LED conversions as follows:

- Replacing only as HPS fixtures or poles fail will cost \$350,000 annually and the timeframe would be approximately 40 years.
- Spreading the program over five years will cost \$2,920,000 annually.

Mr. Haws listed the possible financing or funding mechanisms as (1) local sales tax which is only viable if the current practice is continued, (2) bond funding, or (3) third-party financing facilitated by energy services companies. (See Page 10 of Attachment 1)

Mr. Haws announced that staff recommends seeking bond funding for LED conversions of \$14.6 million as part of the next transportation-related bond election, with costs of conversion spread over a period of five years.

In response to a question from Councilmember Luna, Mr. Haws explained that although the technology of power and wifi on street lights is available, it is unrelated to the LED conversion. He added that staff could explore the possibility of packaging those items together with the conversion.

Councilmember Luna stated that he is a member of the Information Technology and Communications Steering Committee and has learned that many communities use the street light technology to analyze traffic patterns and he would forward that information to staff to review. He mentioned that citizens from the Desert Uplands Area were concerned with the LED light output and asked that it be studied further by the Sustainability and Transportation (SAT) Committee before moving forward.

Mr. Haws agreed to assess the light output levels and any adjustments that can be made.

In response to a question from Councilmember Richins, Mr. Haws confirmed that the \$3.1 billion spent on energy costs was a combination of both Salt River Project (SRP) and City of Mesa energy costs. He further explained that most streetlights are not metered and a flat rate is paid per pole. He indicated that the numbers displayed are based on SRP's current rate structure but pointed out that staff would like to work with SRP to adjust that billing rate structure.

Councilmember Richins commented that the project should go back to the SAT Committee and said he was less inclined to debt finance. He suggested a pilot program within the City of Mesa electric service area could be explored in order to model something sensible.

Mr. Hulme provided a brief background of a pilot program in the Fiesta District that is able to sense when lights are out. He explained that SRP's rate structure is complicated and staff is working together with other municipalities and SRP to restructure those rates.

Councilmember Richins pointed out that SRP is benefiting from the energy savings being accomplished by the cities converting to LED and believes they would be willing to negotiate without Mesa having to incur debt.

Mr. Hulme advised that the issue is not the cost of the kilowatt, but the actual delivery to the device.

Mr. Bowers informed the Council that the study from which this presentation is based, showed a 55% energy usage reduction.

Mayor Giles suggested that the LED conversion be reviewed at a later date as a possible part of the 2018 Streets Bonds package. He added that this will allow time for other municipalities to negotiate rates with SRP and for costs to decrease.

Councilmember Luna stated that it's critical to begin incorporating new technology into the project, especially downtown where students would benefit.

City Manager Christopher Brady explained that wifi is currently available downtown where people congregate, as well as at some of the City's parks.

Mayor Giles commented that LED lights are being marketed aggressively and he anticipated that the prices will continue to decrease. He predicted that in another year many companies may respond to a Request for Proposals (RFP).

Mr. Brady stated that the cost benefit will be realized after staff works with SRP on an adjusted rate structure.

Councilmember Richins indicated that the other discussions currently being held with SRP should be considered during the negotiations, as they may be combined.

Mr. Brady stated that staff would work with the SAT Committee on these issues.

3. Information pertaining to the current Job Order Contracting projects.

This item was not discussed by the Council.

4. Acknowledge receipt of minutes of various boards and committees.

4-a. Transportation Advisory Board Meeting held on July 19, 2016.

4-b. Library Advisory Board Meeting held on May 17, 2016.

It was moved by Councilmember Glover, seconded by Councilmember Luna, that receipt of the above-listed minutes be acknowledged.

Mayor Giles declared the motion carried unanimously by those present.

5. Hear reports on meetings and/or conferences attended.

Vice Mayor Kavanaugh: Fiesta District Ribbon Cutting Ceremony

6. Scheduling of meetings and general information.

City Manager Christopher Brady stated that the schedule of meetings is as follows:

Monday, October 3, 2016 – Study Session

Monday, October 3, 2016 – Regular Council Meeting

7. Convene an Executive Session.

It was moved by Councilmember Glover, seconded by Councilmember Luna, that the Study Session adjourn at 8:00 a.m. and the Council enter into an Executive Session.

Mayor Giles declared the motion carried unanimously by those present.

7-a. Discussion or consultation for legal advice with the City Attorney. (A.R.S. §38-431.03A (3)) Discussion or consultation with designated representatives of the City in order to consider the City's position and instruct the City's representatives regarding negotiations for the purchase, sale, or lease of real property. (A.R.S. §38-431.03A (7)) Discussion or consultation with the City Attorney in order to consider the City's position and instruct the City Attorney regarding the City's position regarding contracts that are the subject of negotiations, in pending or contemplated litigation or in settlement discussions conducted in order to avoid or resolve litigation. (A.R.S. §38-431.03A(4))

1. First Amendment to the Pre-Annexation and Development Agreement for the Empire Southwest Campus.

2. Ground Lease Agreement for City-owned property at 49 West First Street with the Metropolitan Youth Symphony.

8. Adjournment.

Without objection, the Study Session adjourned at 9:10 a.m.

JOHN GILES, MAYOR

ATTEST:

DEE ANN MICKELSEN, CITY CLERK

I hereby certify that the foregoing minutes are a true and correct copy of the minutes of the Study Session of the City Council of Mesa, Arizona, held on the 29th day of September, 2016. I further certify that the meeting was duly called and held and that a quorum was present.

DEE ANN MICKELSEN, CITY CLERK

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(Attachments – 1)



Streetlight Conversion to Energy Efficient LED Fixtures

September 2016 Council Presentation



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Streetlight Conversion to LED Fixtures =

Replacing existing high pressure sodium (HPS) light fixtures with more energy efficient light emitting diode (LED) light fixtures to reap the benefits of lower energy usage and costs



Basic comparison of HPS and LED lamps...

High Pressure Sodium (HPS) Lamps	Light Emitting Diode (LED) Lamps
Commercially available circa 1970	Commercially available since 2008
Cost of fixtures nearly level or constant	Cost of LED fixtures has fallen more than 85% since 2008 and continues to decrease
Less control over light spread and placement	Better light placement control
Lamp life of approximately 20,000 hours	Lamp life of 50,000 – 100,000 hours
Higher maintenance cost	Lower maintenance cost
Higher energy costs	Lower energy costs
Many manufacturers phasing HPS out	Many manufacturers are moving towards LED





Current yearly energy cost for streetlights = Approx. \$3.1M

LED fixtures use less energy

Maintenance costs are also lower for LED lights due to longer bulb/fixture life

Other Valley Cities Using LED for All New Installations:

- Phoenix
- Chandler
- Surprise
- Glendale

Cities Engaged in Doing Mass LED Conversion Projects:

- Phoenix
- Austin, TX
- Las Vegas, NV



Streetlight Conversion

- Number HPS fixtures currently in City of Mesa's streetlight system = 36,000 fixtures
- Replacement cost of HPS with LED fixtures = \$240- \$765 per fixture including labor and materials



Streetlight Conversion

- Total cost of LED conversion = Approximately \$14.6 million
- Return on investment period = 11.5 years



Transportation Department's Current practice relative to LED conversion...

- Replace HPS fixtures with LED only as the HPS fixtures or the poles to which they are mounted go bad
- Streetlight installations in new developments and installations are generally LED



Alternative time frames for LED conversions:

Alternative	Description	Annual Costs	Timeframe
1	Current practice: Replace only as HPS fixtures or poles fail	\$350,000	Approx. 40 years
2	Spread program over 5 years	\$2,920,000	5 years



Alternative finance options:

- Local sales tax – Likely viable only for 40+ year replacement time frame
- Bond funding – Future bond election
- Third-party financing – facilitated by energy services companies, who provide financing and guarantee energy savings performance



Staff Recommendation:

- **Seek bond funding for LED conversions (\$14.6M) as part of next transportation-related bond election, with costs of conversion spread over 5 years**





QUESTIONS?

